

### DETAILED ACTION

1. Claims 1-11 are pending in the application.

#### *Drawings*

2. Figures 18-22 should be designated by a legend such as "Prior Art" since only that which is known is illustrated. Correction is required.

#### *Claim Rejections - 35 USC § 103*

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

4. Claims 1-11 are rejected under 35 U.S.C. 103(a) as being unpatentable over Strolle et al. (7,194,047) in view of Applicant Admitted Prior Art (AAPA).

In regards to Claim 1, the Strolle discloses a data sending device for generating and outputting a sending signal (Fig. 2), the data sending device comprising: a decoding section for decoding the sending data (Fig. 2, element 26); and a sending section for generating and outputting the sending signal based on output data from the decoding section (Fig. 2, element 28). However, Strolle does not explicitly disclose the decoding section to be a biphase decoder.

The AAPA discloses a system implementing biphase data (Fig. 18-21 & Specification, Page 1, line 14-to-Page, 4, line 25). Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention that the AAPA discloses implementing biphase data and implementing the biphase decoder in the

sending device as described in the AAPA so as to be able to increase the data rate of the data. Furthermore, it would have been obvious to one of ordinary skill in the art at the time of the invention that there is no criticality in performing biphase decoding this is a matter of design choice depending on the protocol implemented in the system again depending on the application for the protocol.

In regards to Claim 2, the Strolle in view of AAPA discloses a data sending device for generating and outputting a sending signal as described above. The AAPA further discloses the sending section includes a mapping section for mapping each symbol of the output data from the biphase decoding section to any one of a plurality of signal levels, and generates the sending signal based on output data from the mapping section (Fig. 21, element 98 & Fig. 22). Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention that Strolle in view of AAPA satisfies the limitations of the claim.

In regards to Claim 3, the Strolle in view of AAPA discloses a data sending device for generating and outputting a sending signal as described above. The AAPA further discloses the mapping section performs mapping such that a higher/lower relationship of the signal level of each symbol with respect to a reference level is constantly inverted on a symbol by symbol basis (Fig. 22 & Specification, Page 4, lines 11-21 & Page 5, lines 1-8). Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention that Strolle in view of AAPA satisfies the limitations of the claim.

In regards to Claim 4, the Strolle in view of AAPA discloses a data sending device for generating and outputting a sending signal as described above. Strolle further discloses the sending data includes a data section to which encoding is applied (Abstract, lines 1-5 & Fig.'s 1-2, element "High Priority Pkt."), and a non-data section to which encoding is not applied (Fig.'s 1-2, element "Normal Pkt.")

{Interpretation: The reference discloses higher rate encoding for high priority data and lower rate encoding for normal priority data, this is interpreted as encoding or not encoding depending on the data}; the decoding section detects the non-data section (Fig. 2, element 26); when the decoding section detects the non-data section, the mapping section maps the non-data section using a mapping table which is different from a mapping table used for the data section (Column 7, lines 38-60 & Fig. 2, element 24, 28) {Interpretation: The reference discloses a modulator which performs the mapping and further includes a robust packet processor for determining if high priority or normal priority is implemented}. Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention that Strolle in view of AAPA satisfies the limitations of the claim.

In regards to Claim 5, the Strolle in view of AAPA discloses a data sending device for generating and outputting a sending signal as described above. The AAPA further discloses a vehicle-mounted apparatus, having a biphasic mark encoding function and includes the data sending device (Specification, Page 2, lines 14-19 & Fig.'s 20-21). Therefore, it would have been obvious to one of ordinary skill

in the art at the time of the invention that Strolle in view of AAPA satisfies the limitations of the claim.

In regards to Claim 6, Strolle discloses a data receiving device for generating and outputting receiving data based on a receiving signal (Fig. 1, elements 13-14 & Fig. 3), the data receiving device comprising: a receiving section for receiving the receiving signal (Fig. 3, element 314); and an encoding section for generating the receiving data by encoding output data from the receiving section and outputting the receiving data (Fig. 3A, element 334) {Interpretation: The encoder in the receiver is interpreted as performing the opposite function of the decoder in the transmitter as disclosed in Fig. 2, element 26}. However, Strolle does not explicitly disclose the encoding section to be a biphase encoder.

The AAPA discloses a system implementing biphase data (Fig. 18-21 & Specification, Page 1, line 14-to-Page, 4, line 25). Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention that the AAPA discloses implementing biphase data and implementing the biphase encoder in the sending device as described in the AAPA so as to be able to increase the data rate of the data. Furthermore, it would have been obvious to one of ordinary skill in the art at the time of the invention that there is no criticality in performing biphase encoding this is a matter of design choice depending on the protocol implemented in the system again depending on the application for the protocol.

In regards to Claim 7, Strolle in view of AAPA discloses a data receiving device for generating and outputting receiving data based on a receiving signal as

described above. The AAPA further discloses the receiving section includes a determination section for outputting data in accordance with a signal level of each symbol of the receiving signal (Fig. 21, element 102). Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention that Strolle in view of AAPA satisfies the limitations of the claim.

In regards to Claim 8, Strolle in view of AAPA discloses a data receiving device for generating and outputting receiving data based on a receiving signal as described above. Strolle further discloses the sending data includes a data section to which encoding is applied (Abstract, lines 1-5 & Fig.'s 1-2, element "High Priority Pkt."), and a non-data section to which encoding is not applied (Fig.'s 1-2, element "Normal Pkt.") {Interpretation: The reference discloses higher rate encoding for high priority data and lower rate encoding for normal priority data, this is interpreted as encoding or not encoding depending on the data}; the decoding section detects the non-data section (Fig. 2, element 26); when the decoding section detects the non-data section, the mapping section maps the non-data section using a mapping table which is different from a mapping table used for the data section (Column 7, lines 38-60 & Fig. 2, element 24, 28) {Interpretation: The reference discloses a modulator which performs the mapping and further includes a robust packet processor for determining if high priority or normal priority is implemented}. Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention that the receiver performs the opposite functionality of the transmitter and thus the

receiver detects the different encoding at the transmitter, thus satisfying the limitation of the claim.

In regards to Claim 9, Strolle in view of AAPA discloses a data receiving device for generating and outputting receiving data based on a receiving signal as described above. Strolle further discloses the receiving section generates the output data based on a clock signal recovered from the receiving signal (Fig. 3A, element 323 & Fig. 4, element 406, 428) {Interpretation: The reference discloses synchronizing the received signal which is interpreted as recovering/synchronizing the recovered clock}. Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention that Strolle in view of AAPA satisfies the limitations of the claim.

In regards to Claim 10, the Strolle in view of AAPA discloses a data sending device for generating and outputting a sending signal as described above. The AAPA further discloses a vehicle-mounted apparatus, having a biphasic mark decoding function and includes the data receiving device (Specification, Page 2, lines 14-19 & Fig.'s 20-21). Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention that Strolle in view of AAPA satisfies the limitations of the claim.

In regards to Claim 11, Strolle discloses a data transmission method for transmitting encoded sending data (Fig. 2), wherein: the sending data is decoded and then sent on a sending side (Fig. 2, element 26); and the sending data is reproduced by encoding receiving data on a receiving side (Fig. 3A, element 334).

However, Strolle does not explicitly disclose the decoding section to be a biphase decoder/encoder.

The AAPA discloses a system implementing biphase data (Fig. 18-21 & Specification, Page 1, line 14-to-Page, 4, line 25). Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention that the AAPA discloses implementing biphase data and implementing the biphase decoder/encoder in the sending device as described in the AAPA so as to be able to increase the data rate of the data. Furthermore, it would have been obvious to one of ordinary skill in the art at the time of the invention that there is no criticality in performing biphase decoding this is a matter of design choice depending on the protocol implemented in the system again depending on the application for the protocol.

### ***Conclusion***

5. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.
6. Any inquiry concerning this communication or earlier communications from the examiner should be directed to SUDHANSHU C. PATHAK whose telephone number is (571)272-5509. The examiner can normally be reached on 9am-5pm. If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Chieh M. Fan can be reached on 571-272-3042.

The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Art Unit: 2611

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/Sudhanshu C Pathak/  
Primary Examiner, Art Unit 2611